UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,443	12/22/2000	Fredrik Johansson	00254.00011	8925

22907	7590	01/24/2006

BANNER & WITCOFF
1001 G STREET N W
SUITE 1100
WASHINGTON, DC 20001

EXAMINER
MILLS, DONALD L

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/742,443	JOHANSSON ET AL.
		Examiner	Art Unit
		Donald L. Mills	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>19 October 2005</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>65-128</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>65-128</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/19/2005</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

2.   Claims 65-128 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

Regarding claim 65, the claim specifies forwarding datagrams without any "awareness of

the Mobile IP protocol" (See claim 65, lines 6.) It is unclear how a datagram can be forwarded

from a node to a destination mobile IP node without being aware of the destination address,

which is part of the Mobile IP protocol. The assertion that a node can forward a datagram

without any awareness of the destination's protocol seems to be a complete contradiction since

some destination address corresponding to that protocol must be known in order for the datagram

to ever reach its destination. Further clarification and description is respectfully requested.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United
States and was published under Article 21(2) of such treaty in the English language.

4.   Claim 65 is rejected under 35 U.S.C. 102(e) as being anticipated by Comstock (US

6,452,920 B1).

Regarding claim 65, Comstock discloses a mobile terminating L2TP using mobile IP

data, which comprises:

Forwarding a datagram from a correspondent node to a mobile node using a shortest

path between the mobile node and the correspondent node, wherein the mobile node is in a

mobile IP visiting network having a mobile IP protocol, and wherein the correspondent node is

unaware of the mobile IP protocol (Referring to Figure 2, see column 5, lines 66-67 and column

6, lines 1-6.)

Regarding claim 66, Comstock discloses *registering the mobile node with the mobile IP*

visiting network; and adding a route entry to a routing table in a mobile IP foreign agent

(Referring to Figure 2, see column 5, lines 66-67 and column 6, lines 1-6.)

Regarding claim 67, Comstock discloses *removing the route entry from the routing table*

when the registered mobile node de-registers or times out (See column 2, lines 16-26.)

Regarding claim 68, Comstock discloses *a destination address comprising an address for*

a home network of the mobile node; a nexthop value comprising a local interface to which the

mobile node is attached; and a routing cost comprising a value lower than all other routes

available to the mobile node (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 69, Comstock discloses *routing the datagram based on the destination*

address (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 70, Comstock discloses *wherein routing the datagram comprises using a routing protocol comprising one of Open Shortest Path First (OSPF), and Border Gateway Protocol (BGP)* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 71, Comstock discloses *a source address comprising an address of the mobile node; a destination address comprising a set of subnetworks in a vicinity of the mobile a nexthop value comprising a local interface of the mobile IP foreign agent. IP foreign agent; and a nexthop value comprising a local interface of the mobile IP foreign agent* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 72, Comstock discloses *wherein routing the datagram comprises performing source-restricted destination address routing* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 73, Comstock discloses *wherein a route of the datagram is not propagated to a router using a routing protocol* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 74, Comstock discloses *performing dynamic Network Address Translation (NAT) for a second datagram sent from the mobile node to a second correspondent node, wherein the second correspondent node is part of the mobile IP visiting network* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 75, Comstock discloses *indexing a state in a state table using a mobile node home network address and a link layer address* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 76, Comstock discloses *accepting the state from the state table when the mobile node has a valid registration* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 77, Comstock discloses *denying the state from the state table when the mobile node does not have a valid registration* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 78, Comstock discloses *wherein indexing the state in the state table comprises indexing by the link layer type which the mobile node attaches to the mobile IP foreign agent* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 79, Comstock discloses *distributing static routes and filters for the mobile node to the mobile IP foreign agent* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 80, Comstock discloses *wherein distributing static routes and filters occurs at a time of configuration* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 81, Comstock discloses *wherein distributing static routes and filters occurs at a time of registering the mobile node* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 82, Comstock discloses *wherein distributing static routes and filters occurs as part of a DIAMETER response from a home agent to the foreign agent* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 83, Comstock discloses *tying the filters to a mobile node home network address and a home agent address* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 84, Comstock discloses *applying the filters to traffic sent from the mobile node on a local subnet when the mobile node has a valid registration* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 85, Comstock discloses *blocking the filters when the mobile node does not have a valid registration* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 86, Comstock discloses *allocating a care-of address to the mobile node using a dynamic host configuration procedure* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 87, Comstock discloses *applying the care-of address as a source address to a virtual interface adapter in the mobile node; and using the virtual interface adapter for traffic to destinations within the mobile IP visiting network* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 88, Comstock discloses *enabling the virtual interface adapter at a time of registering the mobile node* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 89, Comstock discloses *disabling the virtual interface adapter at one of a time when a registration of the mobile node is no longer valid, and a time when the mobile node moves to a new mobile IP visiting network* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 90, Comstock discloses *giving a home agent tunnel a lower routing cost as nexthop compared to local IP connectivity for the static routes* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 91, Comstock discloses *wherein registering the mobile node with the mobile IP visiting network involves a dynamic host configuration procedure in a home network* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 92, Comstock discloses *wherein distributing the static routes comprises including the static routes as an extension in a mobile IP registration reply message as part of the dynamic host configuration procedure* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 93, Comstock discloses *giving local IP connectivity a lower routing cost as nexthop compared to a home agent tunnel for static routes distributed as part of the dynamic host configuration procedure* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 94, Comstock discloses *applying filter rules at the mobile node for traffic being sent and received with local IP connectivity and a home agent tunnel respectively* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 95, Comstock discloses *wherein the filter rules are distributed to the mobile node at a time of configuration* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 96, Comstock discloses *wherein the filter rules are distributed to the mobile node at a time of registering the mobile node* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 97, Comstock discloses *wherein the filter rules are distributed as an extension in a mobile IP registration reply message* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 98, Comstock discloses *applying a selective reverse tunneling scheme between a home agent tunnel and local IP connectivity using a routing prefix and a routing cost* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 99, Comstock discloses *giving a lower routing cost to a home agent tunnel route as nexthop compared to local IP connectivity when private address realms for the visiting network and the home network overlap* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 100, Comstock discloses *giving a lower routing cost to a home agent tunnel route as nexthop compared to local IP connectivity for a route to the Internet* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 101, Comstock discloses *giving a lower routing cost to local IP connectivity as nexthop compared to a home agent tunnel route for a route to a same subnetwork as the mobile node* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 102, Comstock discloses *giving a lower routing cost to a home agent tunnel route as nexthop compared to local IP connectivity for a route to a home network* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 103, Comstock discloses *hosting a home network of the mobile node using a plurality of home agents, the home agents having a same home agent IP address* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 104, Comstock discloses *dispatching a plurality of messages among the home agents using a load balancer* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 105, Comstock discloses *retrieving data about a mobile node user at a time of registering the mobile node from at least one of a common AAA server, and an LDAP directory* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 106, Comstock discloses *sending a message from a one of the plurality of home agents to a care-of address using a direct server return method* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 107, Comstock discloses *sending a routing update related to availability of the mobile node to a router* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 108, Comstock discloses *sending an ICMP destination unreachable message from the load balancer to a tunnel decapsulator when an assigned home agent fails; and reporting a tunnel soft state as network unreachable when a foreign agent is the tunnel decapsulator* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 109, Comstock discloses *sending a new registration to the same home agent IP address upon receipt of the ICMP destination unreachable message* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 110, Comstock discloses *confirming that a one of the plurality of home agents is alive before allocating a registration request to the one of the plurality of home agents* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 111, Comstock discloses *allocating a new home agent for the mobile node* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 112, Comstock discloses *wherein a first home agent acts as a primary agent and a second home agent acts as a secondary agent for the same home agent IP address* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 113, Comstock discloses *using a care-of address which resides behind a network address translation; rejecting a first registration request from the mobile node when a source address in a header of the first registration request is different from a care-of address within the first registration request; and sending a challenge* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 114, Comstock discloses *responding to the challenge with a second registration request* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 115, Comstock discloses *using the source address of a registration request as the destination address for encapsulated datagrams sent to the care-of address* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 116, Comstock discloses *using a source address of a reply to a registration request as the source address for encapsulated datagrams sent to a home agent* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 117, Comstock discloses *performing address masquerading using a port translation; and tunneling a payload datagram from the care-of address to a home agent using UDP between an inner IP header and an outer IP header* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 118, Comstock discloses *establishing a plurality of mobile IP security associations between the mobile node, a home agent, and a foreign agent using public key*

certificates; and signing the public key certificates using a mobile service manager (See column

1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 119, Comstock discloses *configuring the foreign agent with one of the*

public key certificates and a public key certificate of the mobile service manager; configuring the

home agent with one of the public key certificates and the public key certificate of the mobile

service manager; and configuring the mobile node with one of the public key certificates, the

public key certificate of the mobile service manager, and the public key certificate of the home

agent (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 120, Comstock discloses *including the public key certificate of the*

mobile node as a mobile IP extension in a registration request message; including the public key

certificate of the foreign agent as a mobile IP extension in the registration request message; and

including the public key certificate of the home agent and the public key certificate of the foreign

agent in a registration reply message (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 121, Comstock discloses *verifying a signature of one of the public key*

certificates using the mobile service manager (See column 1, lines 45-62 and column 3, lines 40-

45.)

Regarding claim 122, Comstock discloses *matching a received certificate to a certificate*

revocation list provided by the mobile service manager at a time of configuration (See column 1,

lines 45-62 and column 3, lines 40-45.)

Regarding claim 123, Comstock discloses *validating the public key certificate of the*

foreign agent on behalf of the mobile node; and sending a signed version of the public key

certificate of the foreign agent to the mobile node in a registration reply message (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 124, Comstock discloses *applying a public key of the received certificate to an authenticator in a mobile IP authentication extension* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 125, Comstock discloses *applying a public key of the public key certificate of the foreign agent to the authenticator in the mobile IP authentication extension* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 126, Comstock discloses *establishing a Security Parameter Index (SP1) equal to a predetermined integer larger than 255 between a pair of nodes when authentication is successful* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 127, Comstock discloses *establishing one of IP security, and transport layer security using a same X.509 certificate among the mobile node, the foreign agent, and the home agent* (See column 1, lines 45-62 and column 3, lines 40-45.)

Regarding claim 128, Comstock discloses *accessing one or more servers in a home network and a visiting network using respectively the home agent and foreign agent as security proxies* (See column 1, lines 45-62 and column 3, lines 40-45.)

Response to Arguments

5.   Applicant's arguments filed October 19, 2005 have been fully considered but they are not persuasive.

Rejection Under 35 USC § 112

On page 13 of the remarks, regarding claim 65, the Applicant argues forwarding

datagrams without any "awareness of the Mobile IP protocol" is supported in the original written

description and drawings. Regardless, the correspondent node is aware of the Mobile IP protocol

since the correspondent node is aware of the stable IP destination address of the mobile node and

sends data grams to that address. Therefore, by definition the correspondent node is aware of the

Mobile IP protocol and the claim limitation is inaccurate and misleading.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The

examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills

De M

January 22, 2006

JOHN PEZZLO
PRIMARY EXAMINER